

Date: Thursday, 3/22/2007 1:55:10 PM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: AFT TUBE ASSEMBLY
Job Number	: 31320		
Estimate Number	: 10699		
P.O. Number	: N/A	Part Number	: D3391025
This Issue	: 3/22/2007	S.O. No.	: N/A
Prsht Rev.	: NC	Drawing Number	: D3391 REV <u>E</u> <u>PH</u>
First Issue	: N/A	Project Number	: N/A
Previous Run	: 31319	Drawing Revision	: <u>E</u> <u>07.04.11</u>
	Type : LANDING GEAR	Material	: N/A
Written By	: <u>07.03.22</u>	Due Date	: 4/10/2007
Checked & Approved By	: <u>07.03.22</u>	Qty:	1 Um: Each
Comment	Est Rev B 06-02-07 ECN773 dwg rev. D EC Est Rev:C 06-03-28 Update Manufacturing Instructions JLM est rev D 07.03.20 revF dwg ec		

Additional Product

Job Number: 

Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D6014090	ALUMINUM EXTRUSION
-----	----------	--------------------



Comment: Qty.: 1.0000 f(s)/Unit Total : 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty	Part Number	Description	Batch
1	D6014-090	Extrusion	<u>26546</u>

Identify as D3391-3

M8 07/04/01 1

2.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599 Rev: F & Dwg D3391 Rev: F

M8 07/04/01 1

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

M8 07/04/02 1

4.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS

1-Machine as per Folio FA 599 Rev: N/A & Dwg D3391 Rev: F

2-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

3-Deburr

N/A
07.03.03

E 07/04/03 1

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 3/22/2007 1:55:11 PM

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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT TUBE ASSEMBLY

Job Number: 31320

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description:

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

Sn 0764/03

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

SF 07/04/09

7.0

BENDING

BENDING MACHINE



Comment: NC Bender

Form as per Dwg D3391 Using Bend Prog 3391025

EL 7/4/10

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP 7-4-10

9.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill Tube as per D3391 using DT8809 (HOLES MARKED "A" ONLY)

3-Drill and c' sink wearshoe holes as per Dwg D3391 Using DT8878(Mid Tube) & DT8217 Wearplate Jig

4-C'sink holes for float bag (4 holes per side) as per Dwg D3391

5-Deburr

DP 7-4-11

Tools: rill

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP 0704-12 ①

11.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

DP 0704-13 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Drawing Name: AFT TUBE ASSEMBLY

Job Number: 31320

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

POWDER COATING

POWDER COATING



M103706



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

MS

07-04-13

(1)

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



(1)

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

m-d

07/04/13

14.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Aft Cap

Pick:

Qty

Part Number

Description Batch

1

D2646

Aft Cap

B.30119

15.0

D35371

WEARPAD



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPAD

16.0

D35377

Wearpad



PH
07.04.11

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearpad

FUE NOT
TURN OVER

17.0

D35531

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

18.0

D35533

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

19.0

AESS10KB366

INSERT



(1)

Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

Insert

Pick:

Qty

Part Number

Description

Batch

m-d 07/04/13

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
07.04.11	15 to 17	FOR THIS W/O MAKING PARTS J.A.W D3391 Rev E. CROSSED OUT PARTS ARE NOT REQ'D	RM 07.04.11					

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 3/22/2007 1:55:11 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT TUBE ASSEMBLY

Job Number: 31320

Part Number: D3391025

Job Number:



*

Seq. #:

Machine Or Operation:

Description:

14 AEES10KB366 Insert

M103758

✓

20.0

AEES10KB316

INSERT



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

INSERT

Pick:

Qty Part Number Description Batch
2 AEES10KB316 Insert
or NAS1330C3KB316

M17905

✓

21.0

AEES10KB266

INSERT



Comment: Qty.: 6.0000 Each(s)/Unit Total: 6.0000 Each(s)

INSERT

Pick:

Qty Part Number Description Batch
2 AEES10KB266 Insert
or NAS1330C3KB266

M17905

✓

*

22.0

NAS1330C3KB166

INSERT



Comment: Qty.: 12.0000 Each(s)/Unit Total: 12.0000 Each(s)

INSERT

Pick:

Qty Part Number Description Batch
8 NAS1330C3KB166 Insert

M103278

✓

*

23.0

AN3C4A

BOLT



Comment: Qty.: 6.0000 Each(s)/Unit Total: 6.0000 Each(s)

Bolt

Pick:

Qty Part Number Description Batch
2 AN3C4A Bolt

M103691

m.d 07/04/13

24.0

AN3C5A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Bolt

PH 07-04-11

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes NO DQA: PD Date: 01/01/16
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 3/22/2007 1:55:11 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT TUBE ASSEMBLY

Job Number: 31320

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description:

25.0

AN960C10L

washer



Comment: Qty.: ~~10.0000~~ Each(s)/Unit Total: 10.0000 Each(s)

Inventory 2

Pick:

Qty

Part Number Description

Batch

2

AN960C10L

Washer

M103.691

*

26.0

NAS1515H3L

WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

WASHER

Pick:

Qty

Part Number

Description

Batch

2

NAS1515H3L

Washer

M103641

27.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



①

Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Install inserts as per Dwg D3391

2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291

Sikaflex expiry date: 07-10

M103497

M-L

07/04/13

28.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

29.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

ISL 31710A

30.0

QC21

FINAL INSPECTION/W/O RELEASE



①

Comment: FINAL INSPECTION/W/O RELEASE

07/04/16

Job Completion



U 37016

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	31320
Description: Float Skidtube (412)		Part Number:	D3391-3
Inspection Dwg: D3391	Rev: EF 07.05.07	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

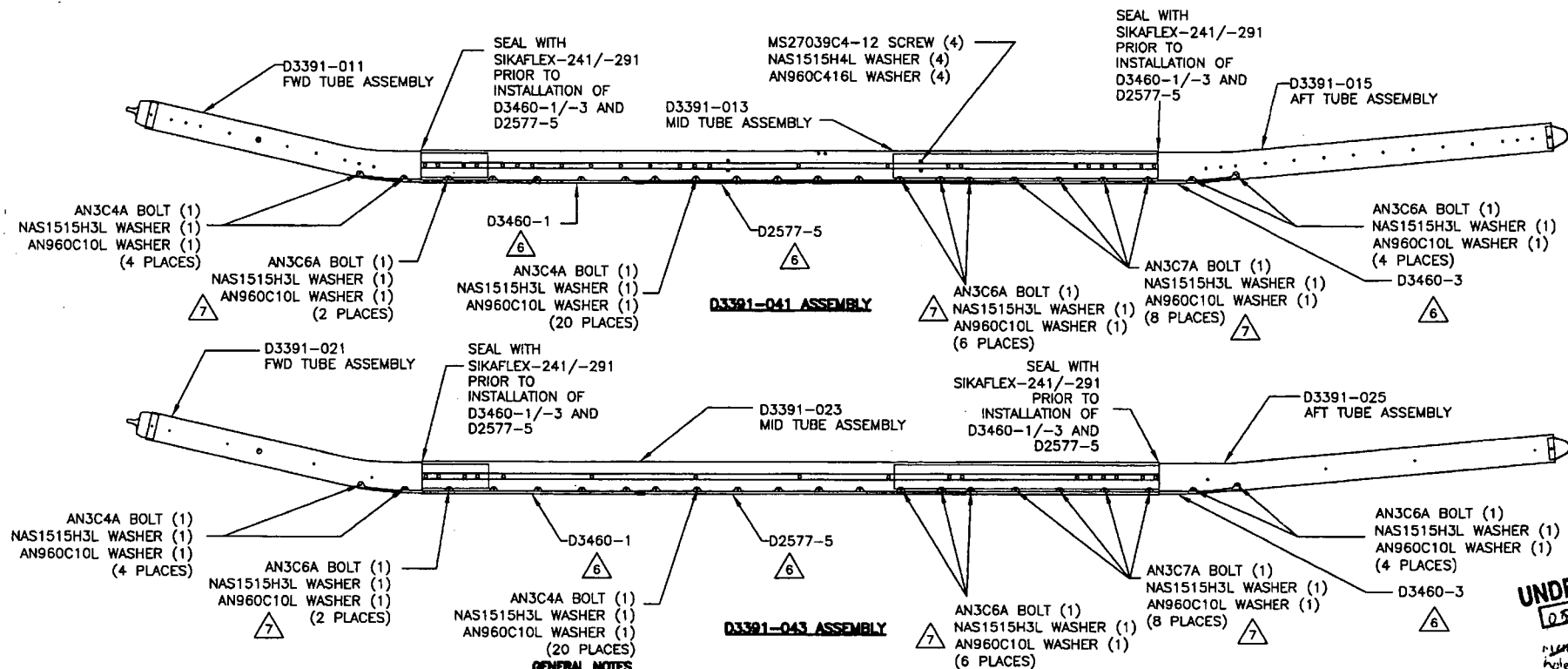
☒ First Article ☐ Prototype

NOTE: AH 07.04.11
OKAY TO USE REV F
FOR D3391-3

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
14.000	+/-0.010	14.000	✓			
3.500	+/-0.010	3.503	✓			
88.93	+/-0.030	88.93	✓			
44.995	+/-0.030	45.000	✓			
3.200	+/-0.010	3.205	✓			
1.526	+0.000/-0.030	1.526	-			
0.200	+/-0.010	0.206	-			
7.500	+/-0.010	7.498	-			
27.750	+/-0.010	27.750	-		Tape measure	
31.750	+/-0.010	31.750	-		Tape measure	
35.250	+/-0.010	35.250	-		Tape measure	
0.400	+/-0.010	0.400	-			
0.200	+0.005/-0.001	0.200	-			
3.300	+/-0.010	3.301/3309	-			
0.200	+/-0.010	0.206	-			
3.520	+/-0.010	3.522	-			
0.687	+0.010/-0.000	0.688	-			
R0.062	+/-0.010	0.062	-		R-L	
Ø0.484	+0.005/-0.001	0.486	-			

Measured by: MS	Audited by: S. P.	Prototype Approval:	N/A
Date: 07/04/09	Date: 07/04/09	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	



GENERAL NOTES

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 4) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL "E" SIZE HOLES (#0.250-#0.257) FOR WEARSHOE INSERTS.
C/SINK #0.391/#0.425 x 100" AS APPLICABLE AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 6) APPLY A LAYER OF SIKAFLEX -241/-291 ADHESIVE BETWEEN THE BOTTOM OF THE SKIDTUBE ASSEMBLY AND THE WEARPLATES
- 7) DO NOT TORQUE, HAND TIGHTEN ONLY

D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY - 041	QTY - 043	PART NUMBER	DESCRIPTION
X	X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
		D3391-043	FLOAT SKIDTUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
	1	D3391-021	FWD TUBE ASSEMBLY
	1	D3391-023	MID TUBE ASSEMBLY
	1	D3391-025	AFT TUBE ASSEMBLY
24	24	AN3C4A	BOLT
12	12	AN3C6A	BOLT
8	8	AN3C7A	BOLT
44	44	NAS1515H3L	WASHER
44	44	AN960C10L	WASHER
4		MS27039C4-12	SCREW
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
1	1	D2577-5	WEARSHOE
1	1	D3460-1	WEARSHOE
1	1	D3460-3	WEARSHOE

OK RA
07.cu.11
UNDER REVIEW
07.01.10
REVISION DETAIL
Notes smaller

RELEASED

06-05-03

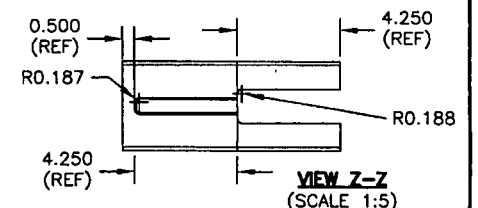
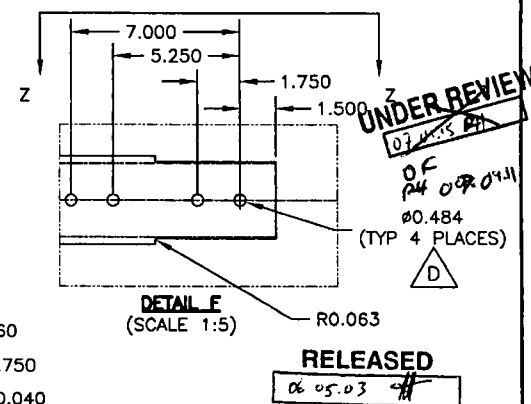
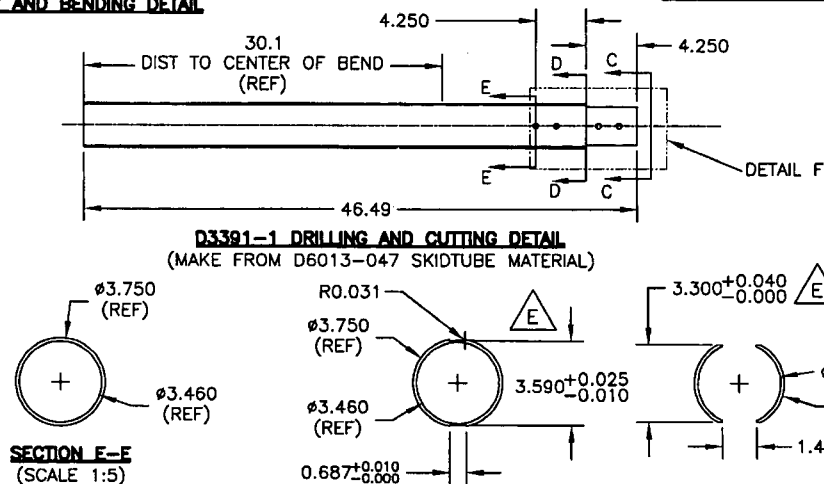
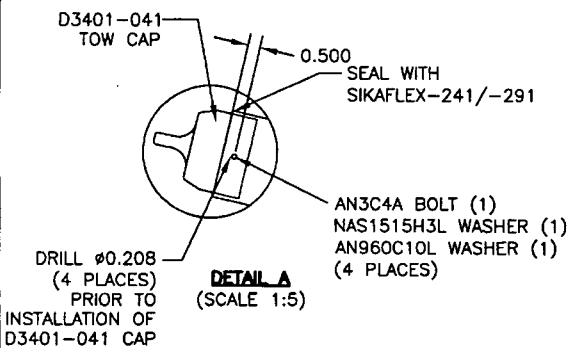
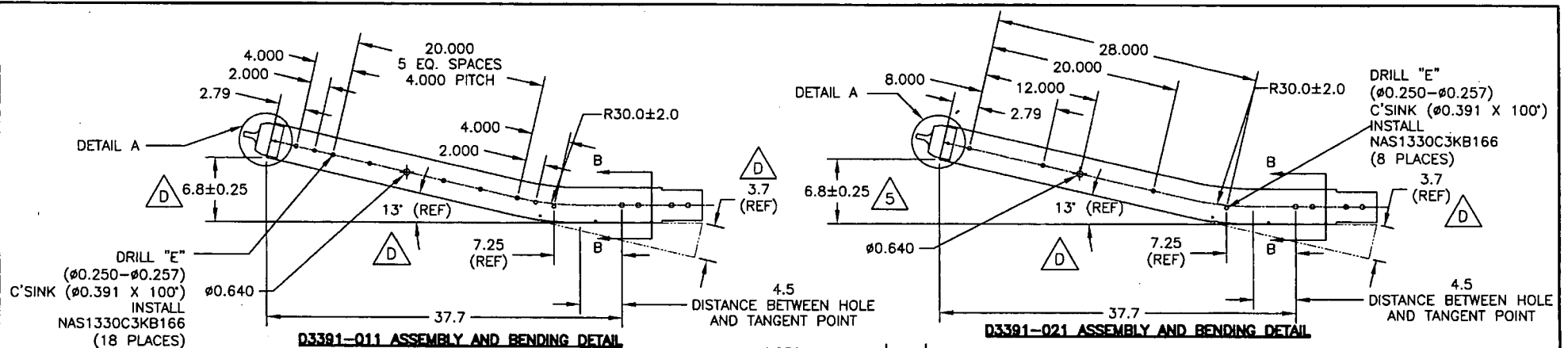
E	06.04.25	CHANGE TOLERANCE, EASE MANUFACTURE
D	06.01.23	UPDATE TOLERANCE, CHANGE HOLE SIZE
C	05.09.27	LENGTHEN AFT EXTENSION
B	05.06.10	DRAWING UPDATES
A	05.02.07	NEW ISSUE
DESIGN	PH	DRAWN BY PH
CHECKED	PH	APPROVED
DATE	06.04.25	TITLE
		412 FLOAT SKIDTUBE

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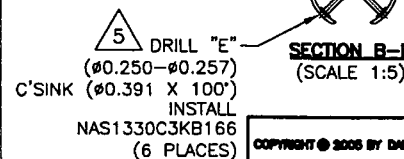
DART DART AEROSPACE USA, INC.
PORT HADLOCK, OH

DRAWING NO. D3391
REV. E
SHEET 1 OF 5
SCALE
NTS



D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X	X	D3391-011	FWD TUBE ASSEMBLY
		D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
4	4	AN3C4A	BOLT
4	4	NAS1515H3L	WASHER
4	4	AN960C10L	WASHER
24	14	NAS1330C3KB166	INSERT



DESIGN PH PH DART DART AEROSPACE USA, INC. PORT WOLFOCK, GA

CHECKED PH APPROVED PH

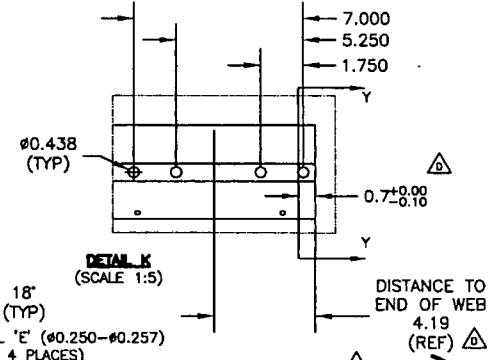
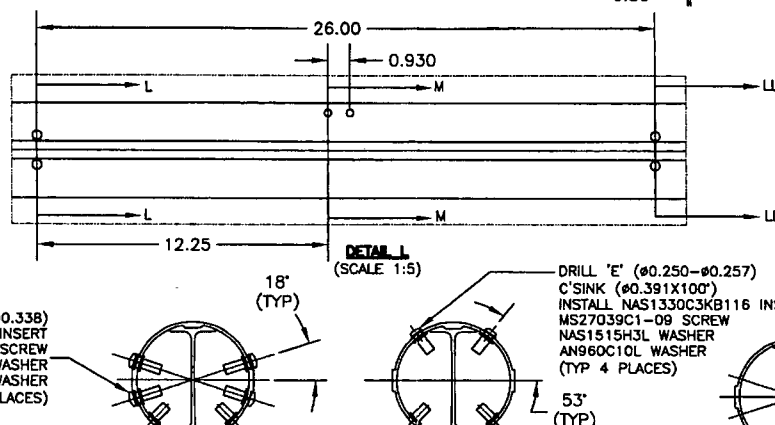
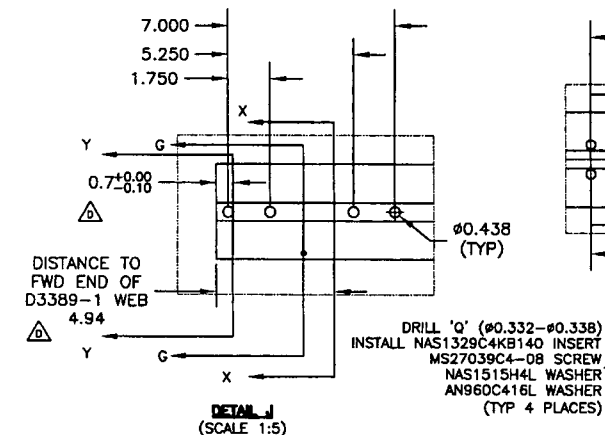
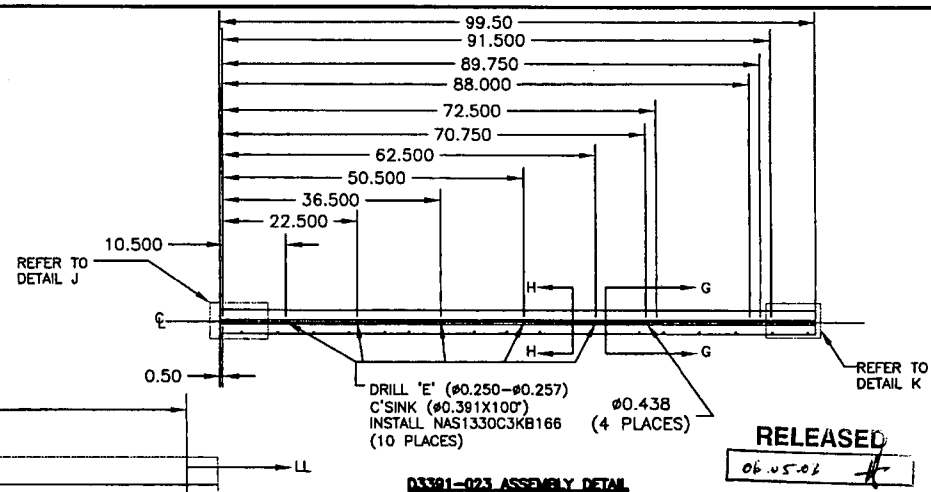
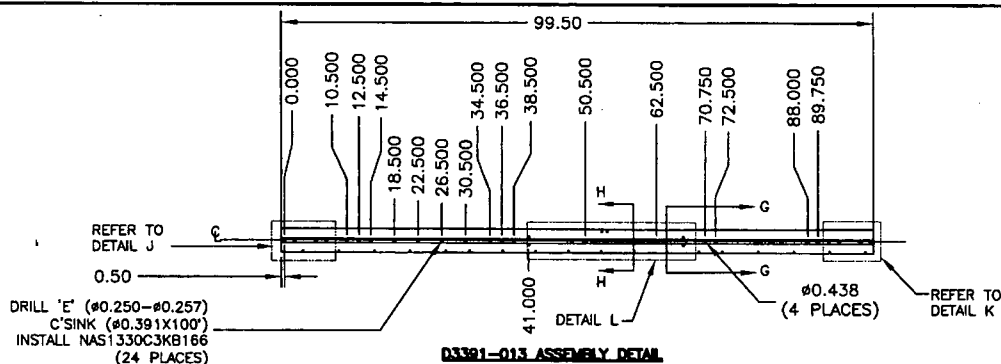
DATE 06.04.25

DRAWING NO. D3391

TITLE 412 FLOAT SKIDTUBE

REV. E SHEET 2 OF 5 SCALE 1:10

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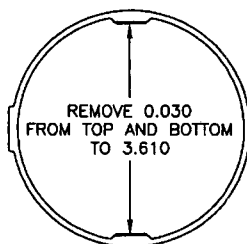
D3391-013/-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 013	QTY - 023	PART NUMBER	DESCRIPTION
X		D3391-013	MID TUBE ASSEMBLY
	X	D3391-023	MID TUBE ASSEMBLY
1	1	D2500-1-100	EXTRUSION
1	1	D3389-1	WEB
24	20	NAS1330C3KB116	INSERT
24	10	NAS1330C3KB166	INSERT
4		NAS1329C4KB140	INSERT
4		NAS1515H3L	WASHER
4		AN960C10L	WASHER
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
4		MS27039C1-09	SCREW
4		MS27039C4-08	SCREW

D3391-013/-023 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015

SECTION I-I (SCALE 1:4)

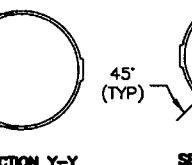


SECTION X-X (SCALE 1:2)

SECTION M-M (SCALE 1:4)

REMOVE 0.225
FROM TOP AND BOTTOM
TO 3.800
(0.7 FROM BOTH ENDS)

SECTION U-U (SCALE 1:4)



SECTION Y-Y (SCALE 1:4)

SECTION G-G (SCALE 1:4)

SECTION H-H (SCALE 1:4)

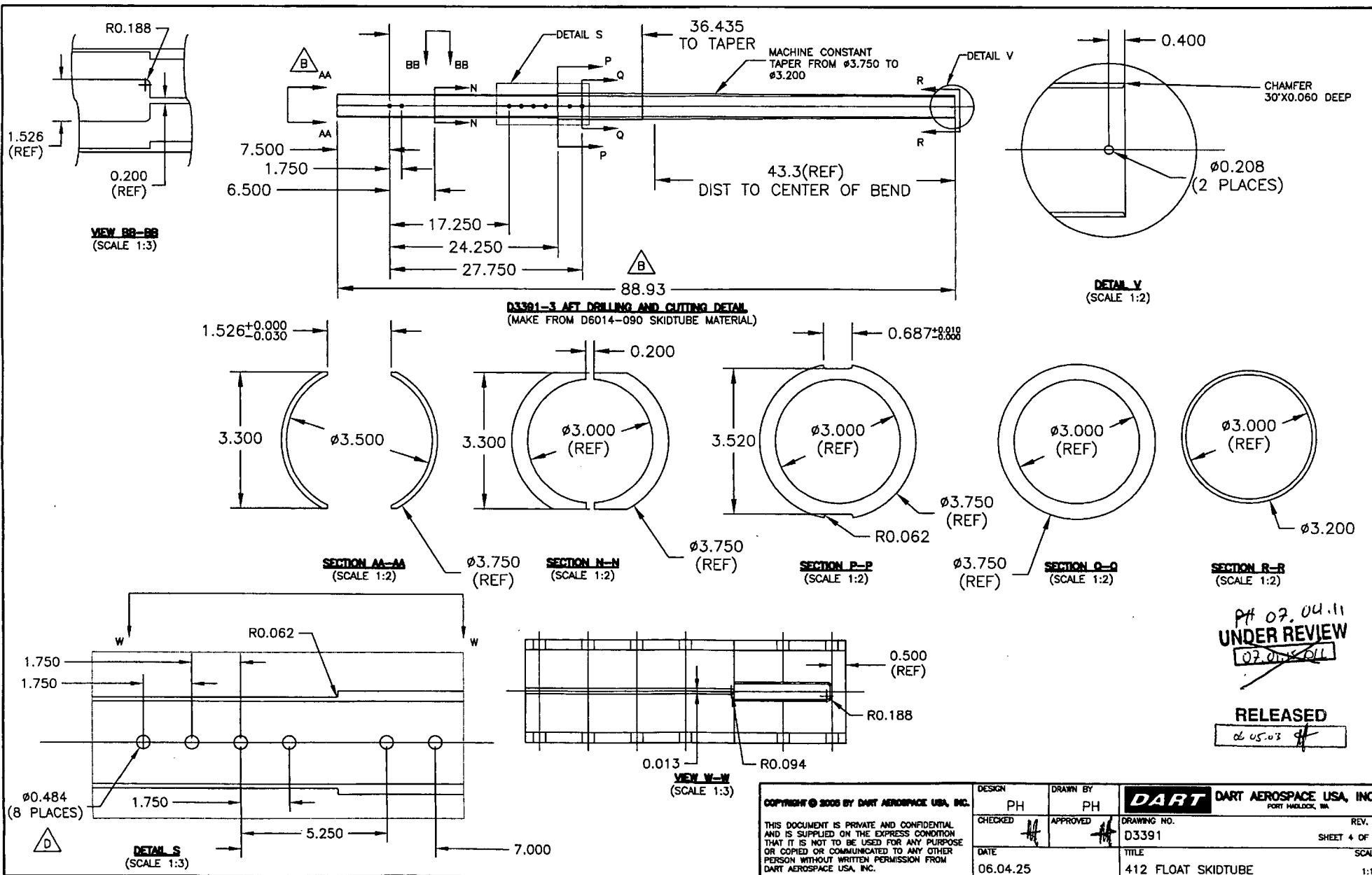
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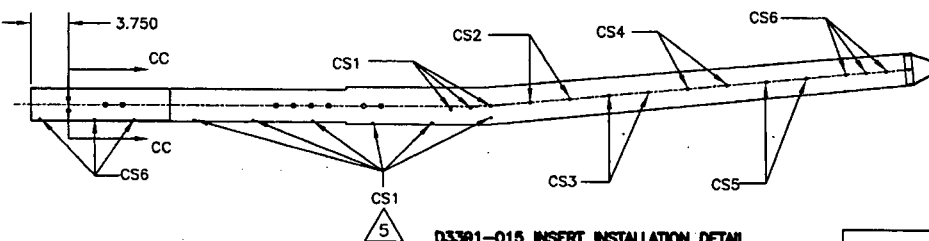
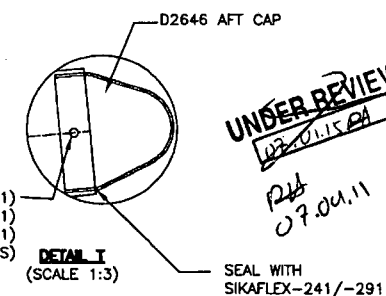
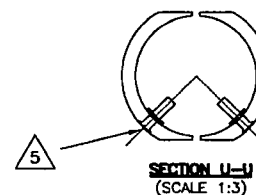
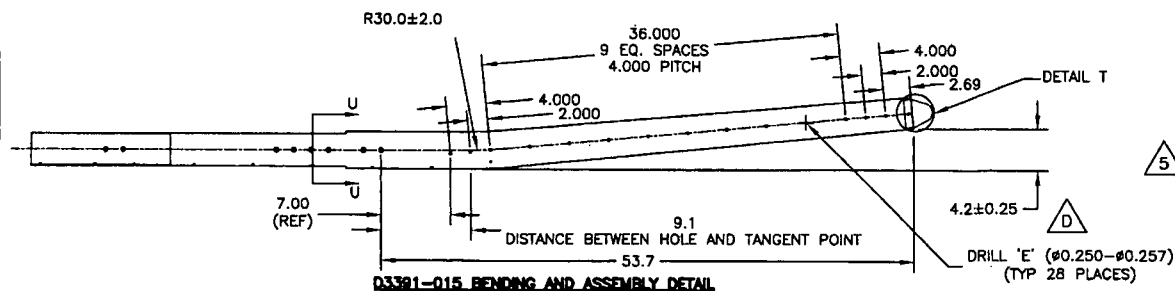
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DESIGN PH	DRAWN BY PH	DART DART AEROSPACE USA, INC.	REV. E
CHECKED #	APPROVED #	DRAWING NO. D3391	SHEET 3 OF 5
DATE 06.04.25	TITLE 412 FLOAT SKIDTUBE	SCALE 1:20	

RELEASED
06.05.06

UNDER REVIEW
07.04.11



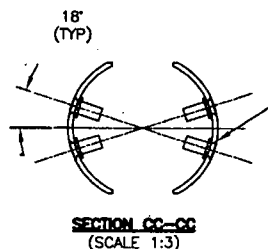


C'SINK AND INSTALL AESS10KBXXX AND/OR NAS1330C3KBXXX IN HOLES MARKED CS1-CS6 AS FOLLOWS

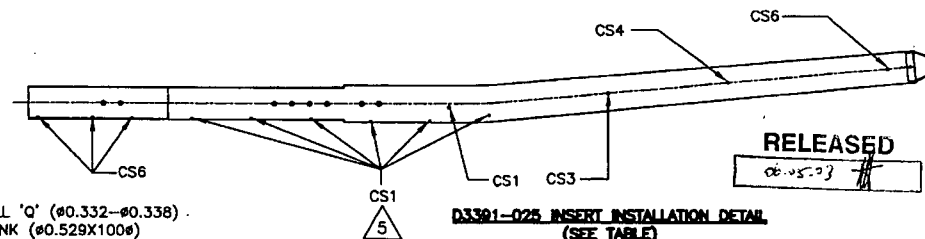
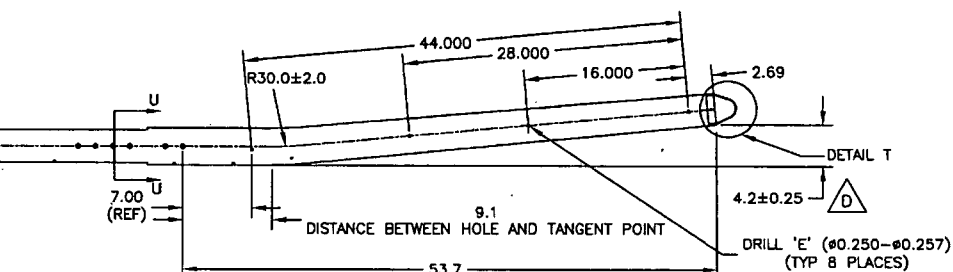
HOLE MARKED	QTY D3391-015	QTY D3391-025	C'SINK	P/N
CS1	18	14	Ø0.425	AESS10KB366
CS2	2		Ø0.391	AESS10KB366
CS3	2	2	Ø0.391	NAS1330C3KE316
CS4	2	2	Ø0.391	NAS1330C3KE266
CS5	2		Ø0.391	NAS1330C3KE216
CS6	12	8	Ø0.391	NAS1330C3KE166

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
18	14	AESS10KB366	INSERT
4	2	NAS1330C3KB316	INSERT
4	2	NAS1330C3KB266	INSERT
4		NAS1330C3KB216	INSERT
12	8	NAS1330C3KB166	INSERT
4		NAS1330C4KB151	INSERT
2	2	AN3C4A	BOLT
2	2	NAS1515H3L	WASHER
2	2	AN960C10L	WASHER



DRILL 'Q' (#0.332-#0.338)
C'SINK (#0.529X100#)
NAS1330C4KB151 INSERT (1)
(4 PLACES)



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DESIGN PH	DRAWN BY PH	DART DART AEROSPACE USA, INC. PORT HADLOCK, MA	REV. E
CHECKED	APPROVED	DRAWING NO. D3391	SHEET 5 OF 5
DATE 06.04.25		TITLE 412 FLOAT SKIDTUBE	SCALE 1:12